



(19)

Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 0 510 200 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:

14.07.1999 Bulletin 1999/28

(51) Int Cl. 6: C09J 7/02, A61F 13/58

(21) Application number: 91917812.9

(86) International application number:
PCT/JP91/01413

(22) Date of filing: 16.10.1991

(87) International publication number:
WO 92/07042 (30.04.1992 Gazette 1992/10)

(54) Paper diaper and its release part structure

Papierwindel und ihr wiederholt verwendbarer Verschluss

Couche-culotte en papier et structure de sa partie détachable

(84) Designated Contracting States:
BE DE FR GB

(56) References cited:
EP-A- 0 108 208 EP-A- 0 306 232
EP-A- 0 458 581 JP-A- 5 237 966
JP-A- 54 139 658 JP-A- 57 180 655
JP-A- 64 009 231 US-A- 3 527 659
US-A- 4 123 604

(30) Priority: 16.10.1990 JP 27802590
30.09.1991 JP 28077591

- CHEMICAL PATENTS INDEX, BASIC
ABSTRACTS JOURNAL Week 8821, 20 July 1988
Derwent Publications Ltd., London, GB; AN
88-144446

(43) Date of publication of application:
28.10.1992 Bulletin 1992/44

Remarks:

The file contains technical information submitted
after the application was filed and not included in this
specification

(73) Proprietor: NITTO DENKO CORPORATION
Osaka 567 (JP)

(72) Inventors:

- ARAKAWA, Masaaki, Nitto Denko Corporation
Osaka 567 (JP)
- HORI, Katsumi, Nitto Denko Corporation
Osaka 567 (JP)

(74) Representative: Grüncker, Kinkeldey,
Stockmair & Schwanhäusser Anwaltssozietät
Maximilianstrasse 58
80538 München (DE)

EP 0 510 200 B1

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to a paper diaper release part structure making a reduced peeling noise, and its object is to provide a release part which is utilized as the release part of an adhesive tape for paper diaper use in which a fastener tape is bonded and fixed to a reinforcing film and to the back of a release tape in a freely peelable manner.

[0002] In general, a diaper release part structure in which a tape for diaper use such as a fastener tape is fixed is required to be difficult to cause separation of the fastener tape when the tape should be kept fixed, in order to prevent leakage or slippage during wearing of the diaper, and on the other hand, is required to enable the fastener tape to be easily peeled from the diaper in order that the diaper be put on and off easily.

[0003] For this reason, in the fastener parts of diapers, adhesives which can easily obtain firm bonding have conventionally been used for the fastener tapes, and the diaper front parts have been provided with a reinforcing film for easy peeling, with the surface of this reinforcing film being coated with a long-chain alkyl type release agent having good holding properties which enable the fastener tape to be prevented from separating when the tape should be kept fixed.

[0004] Although this long-chain alkyl type release agent has exhibited its advantages as an excellent release agent for meeting the above-described demand, there has been a drawback that when mother tries to peel the fastener tape from the reinforcing film, the tape is peeled while making a loud noise of "Bari-Bari".

[0005] Such a peeling noise has posed a problem, for example, that it awakes the baby in sleep or awakes sleeping persons around the baby, and an improvement in this respect has been desired.

[0006] On the other hand, if silicone-based release agents generally employed for various purposes are used as the release agents for use in e.g. adhesive tapes, the tapes do not make such a noise when peeled.

[0007] However, since use of the silicone-based release agent greatly reduces the shear bond strength to the adhesive layers of the tapes, application thereof to e.g. a diaper fastener part is defective in that the tape is prone to separate off and, hence, the silicone-based release agent is not frequently used in such fixing applications at present.

[0008] EP-A-0458581 (relevant with respect to Art. 54(3) EPC) discloses a release surface for use in diaper tape assemblies which comprises a cured release coating of a reactive silicone system comprising at least 15% by weight of a reactive polydialkyl siloxane, at least 40% by weight of a defined reactive silicone high adhesion agent and a silicone crosslinking agent.

[0009] EP-A-0306232 discloses pressure-sensitive adhesive compositions and a refastenable tape closure system comprising a release tape and a fastening tape wherein the fastening tape has a balance of properties such that the tape exhibits a maximum in the peel force between peel rates of 10 cm/minute and 400 cm/minute when peeled from a polyolefin substrate as found in disposable diaper back sheets. The adhesive of the fastening tape comprises a specific range of compositions including an elastomeric component based on A-B-A block copolymer wherein the A blocks are derived from styrene or α -methylstyrene and the B blocks are derived from isoprene, butadiene, or hydrogenated versions of these or an (AB) block copolymer of the same type of composition in another geometry such as a tapered block copolymer or a radial block copolymer, a solid tackifier resin, a liquid tackifier resin, and an end block reinforcing resin.

[0010] JP-A-63-086786 discloses a tackifier tape for sealing corrugated cardboard carton, comprising a carrier plastic tape having a surface treated with a silicone releasing agent and a tackifier layer coated on the other surface.

[0011] US-A-3527659 discloses an intermediate range release agent consisting essentially of (a) 100 parts by weight of a dimethylpolysiloxane-based formulation which is curable to an elastomer and (b) from 0.5 to 45 parts by weight of a toluene-soluble copolymer of (1) $R_3SiO_{1/2}$ units and (2) $SiO_{4/2}$ units, the ratio of (1) to (2) being from 0.6:1 to 1.1:1, and the silicon-bonded hydroxyl content of (b) being no more than 0.7 weight percent, based on the weight of (b), wherein R is a monovalent hydrocarbon radical of no more than 2 carbon atoms.

[0012] US-A-4123604 discloses a coating composition and a process for coating substrates, said composition comprising (1) 100 parts by weight of a diorganopolysiloxane-based formulation which is heat curable to an elastomer, (2) from 0.5 to 90 parts by weight of a toluene soluble copolymer of (a) $R_3SiO_{1/2}$ units, (b) $(CH_2=CH)R_2SiO_{1/2}$ units and (c) $SiO_{4/2}$ units, with R being a monovalent hydrocarbon radical of no more than 2 carbon atoms, and (3) a catalyst comprising complexes of rhodium, the entire composition being essentially free of solvents.

[0013] In view of the above-described problems, the present inventors have studied to utilize the noiseless peel properties of silicone-based release agents and, as a result, it has been found that the object can be accomplished in a release part structure constituted by a combination of a specific pressure-sensitive adhesive layer and a specific silicone-based release layer, and the present invention has thus been completed.

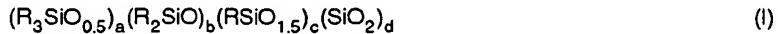
[0014] The present invention provides a paper diaper release part structure having an interfacial boundary, wherein the release part structure comprises

(a) a paper diaper front part being provided with a reinforcing film and a silicone-based release layer coated thereon,

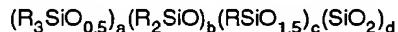
said reinforcing film being bonded to the back sheet on the front part of the paper diaper; and

(b) a fastener tape comprising a tape support and a pressure-sensitive adhesive layer provided thereon,

5 wherein the interfacial boundary is constituted by the pressure-sensitive adhesive layer and the silicone-based release layer, and
 wherein said adhesive layer comprises a tacky substance containing a rubber as a major component and said release layer comprises a silicone-based release agent coated in an amount of 0.01-10 g/m², said silicone-based release agent containing a three-dimensional structure organopolysiloxane in an amount of 1-80% by weight, said organopolysiloxane
 10 having the formula (I)



15 wherein R is a monovalent hydrocarbon group, and a, b, c and d, which represent molar fractions of the respective siloxane units, are such that a is 0.1 to 0.6, b is 0 to 0.45, c is 0 to 0.3, and d is 0.3 to 0.8, provided that a/d is 0.3 to 2.0.
 [0015] Moreover, the present invention provides a paper diaper having a silicone-based release layer coated on a reinforcing film provided on the back sheet on the front part of the diaper and a pressure-sensitive adhesive layer of a release part structure having an interfacial boundary, wherein the interfacial boundary is constituted by the pressure-sensitive adhesive layer and the silicone-based release layer, and wherein said adhesive layer comprises a tacky substance containing a rubber as a major component and said release layer comprises a silicone-based release agent coated in an amount of 0.01-10 g/m², said silicone-based release agent containing a three-dimensional structure organopolysiloxane in an amount of 1-80% by weight, said three-dimensional structure organopolysiloxane having an average composition formula represented by
 25



30 wherein R is a monovalent hydrocarbon group, and a, b, c and d, which represent molar fractions of the respective siloxane units, are such that a is 0.1 to 0.6, b is 0 to 0.45, c is 0 to 0.3, and d is 0.3 to 0.8, provided that a/d is 0.3 to 2.0.
 [0016] The present invention will be explained below.

[0017] It is said that a silicone-based release agent inherently exhibits release properties due to the fact that methyl groups which are the side chains of the dimethylpolysiloxane helical structure face outward from the helix. However, the arrangement of these methyl groups is disordered by mixing an organopolysiloxane having a three-dimensional structure and, as a result, the inherent release properties are lost.
 35

[0018] Based on this idea, the present invention has succeeded to obtain shear properties necessary for fixing diaper tapes by using a silicone-based release agent containing 1-80% by weight of an organopolysiloxane having a three-dimensional structure and by using, as the pressure-sensitive adhesive for bonding, a tacky substance containing a rubber as a major component.

40 [0019] The reason why a tacky substance containing a rubber as a major component is employed in the present invention as the pressure-sensitive adhesive layer constituting the release part is that it is thought that high self-holding properties which withstand shear load are obtained due to the high cohesiveness of the rubber constituting the tacky substance and the tacky substance shows good shear properties to the silicone-based release agent described later.

[0020] As a result of experiments conducted repeatedly by the present inventors, shear bond strengths not less than 45 1 kg/25 mm width were obtained in the case of using tacky substances containing a rubber as a major component, whereas only shear bond strengths as low as below 200 g/25 mm width were obtained in the case of using conventional acrylic pressure-sensitive adhesives.

[0021] As the tacky substance containing a rubber as a major component, a substance mainly comprising either natural rubber or a synthetic rubber can be used. In particular, however, substances mainly comprising an ABA-type or AB-type block copolymer (wherein A is a thermoplastic block and B is a rubber block; e.g., styrene-isoprene-styrene copolymers, styrene-butadiene-styrene copolymers, styrene-ethylene-butadiene-styrene copolymers, styrene-butadiene copolymers and hydrogenation products thereof) are preferred from the standpoint of, for example, avoiding environmental pollution by the use of hot-melt coating.
 50

[0022] The above-described tacky substance containing a rubber as a major component is applied on a substrate such as a tape support, thereby constituting the pressure-sensitive adhesive layer in the present invention.

[0023] The silicone-based release layer constituting the release part in the present invention can be formed of an ordinarily employed silicone-based release agent comprising dimethylpolysiloxane, and either of the addition reaction

type and the condensation reaction type can be used.

[0024] As the organopolysiloxane having a three-dimensional structure contained in the silicone-based release agent described above, an organopolysiloxane having an average composition formula shown by

5



(wherein R is a monovalent hydrocarbon group, and a, b, c, and d, which represent the molar fractions of the respective siloxane units, are as follows; a is 0.1 to 0.6, b is 0 to 0.45, c is 0 to 0.3, and d is 0.3 to 0.8, provided that a/d is 0.3 to 2.0) is used.

[0025] The organopolysiloxane having a three-dimensional structure is added in an amount in the range of 1-80% by weight, preferably 5-60% by weight. Its amount below 1% by weight is not preferred in that the effect of imparting the necessary heavy peel strength cannot be obtained, while its amount exceeding 80% by weight is not preferred because the peel strength becomes so heavy that peeling becomes difficult.

[0026] It is preferred that the silicone-based release agent containing the organopolysiloxane having a three-dimensional structure in the specified amount be coated by means of solventless coating. However, if the viscosity thereof is too high, it is possible to add a small amount of an organic solvent to lower the viscosity, coat the diluted release agent on a film or tape, and then conduct drying treatment, followed by e.g. ultraviolet irradiation treatment.

[0027] The silicone-based release agent is coated in an amount of 0.01-10 g/m², preferably 0.1-3 g/m².

[0028] As the film or tape used as a substrate, those comprising the polypropylene-containing plastic described in JP-A-63-112704, a laminate of a polypropylene and a polypropylene-containing plastic, or a polyester are preferred, and the surface thereof can be either flat or matte.

[0029] It is also preferred that a film containing an olefin-based, styrene-based, urethane-based, or polyester-based elastomer as a major component be used as the substrate, because such a substrate shows good slip properties and is soft.

[0030] It is preferred that the above-described film or tape be subjected beforehand to a surface treatment such as corona treatment in order to prevent peeling of a release agent to be applied on its surface, and a surface tension of at least 3.8 N/m² (38 dyne/cm²) or more is preferred as a measure of the treatment strength.

[0031] Application examples utilizing the release part structure of the present invention are explained by reference to the accompanying drawings. Fig. 1 is an illustrative view showing each part in a paper diaper A, in which B is a back sheet, C is a top sheet in a belt part, D is a reinforcing film, E is a release tape, and F is a fastener tape.

[0032] Fig. 2 shows a structure example in which the release part structure of the present invention is used to bond a reinforcing film D on a back sheet B in a paper diaper A with a fastener tape F. On the back sheet B, a film 1 on a surface of which a silicone-based release layer 2 as described above has been formed by coating is bonded by means of an adhesive 3. On the other hand, on the release layer 2 of this reinforcing film D, the fastener tape F prepared by forming on a tape support 5 a pressure-sensitive adhesive layer 4 comprising a tacky substance containing a rubber as a major component is bonded and fixed through the layer 4 in a freely peelable manner, with a release part of the present invention being constituted at the interfacial boundary between the layer 2 and the layer 4.

[0033] Additionally, in place of the above construction, the release part may have a construction formed by directly heat-bonding a film 1 having a release layer 2 on its surface onto the back sheet B.

[0034] Fig. 1 is an illustrative view showing the construction of a paper diaper. Fig. 2 is a sectional illustrative view showing an example of the present invention in a fastener part of a paper diaper.

Description of the Symbols

45

[0035]

- 1 Film
- 2 Silicone-based release layer
- 3 Adhesive
- 4 Pressure-sensitive adhesive layer
- 5 Tape support

[0036] The present invention will be explained below in detail by means of examples. The "parts" appearing in the sentences mean parts by weight.

[0037] A toluene/xylene solution (solid content 30% by weight) of a three-dimensional structure organopolysiloxane (X-92-140 manufactured by Shin-Etsu Chemical Co., Ltd.) was mixed with a toluene solution (solid content 30% by weight) of an addition reaction type silicone (X-62-2378 manufactured by Shin-Etsu Chemical Co., Ltd.) having a vis-

cosity of 1500 mPa·s (1,500 cps) at 25°C in a manner such that the resulting solutions contained the three-dimensional structure organopolysiloxane at 10% by weight, 30% by weight, and 50% by weight, respectively.

[0038] Further, to these solutions a 1,000 ppm platinum complex with vinylsiloxane (PL-50T manufactured by Shin-Etsu Chemical Co., Ltd.) was added as a catalyst in an amount of 2 parts per 100 parts by weight of the above-described 5 silicone composition.

[0039] Subsequently, this solution was coated as a release agent on a 12 µm-thick polyester film at 0.3 g/m² and then heat-treated at 120°C for 1 minute to form a release layer, thereby obtaining release layer-side sample pieces 1, 2, and 3.

[0040] On the other hand, a low-density polyethylene film having a thickness of 120 µm was coated on one side at 10 a thickness of 50 µm with a tacky substance containing a rubber as a major component and obtained by blending 40 parts of a styrene-isoprene-styrene copolymer with 40 parts of a petroleum resin as tackifier resin, 19 parts of a paraffin oil as softener, and 1 part of an anti-aging agent, whereby a pressure-sensitive adhesive layer was formed. This was 15 cut into 70 mm-length x 25 mm-width to give an adhesive tape-side sample piece.

[0041] This adhesive tape-side sample piece was applied to release layer-side sample pieces 1, 2, and 3 as Examples 15 1, 2, and 3 used according to the present invention. Each of these was subjected to bond strength tests (peel strength, shear bond strength, and holding power), and further subjected to a monitor test with the samples being actually applied to paper diapers.

[0042] Incidentally, the three-dimensional-structure organopolysiloxane content in Example 1 was 10% by weight, that in Example 2 was 30% by weight, and that in Example 3 was 50% by weight.

COMPARATIVE EXAMPLES

[0043] In Comparative Example 1, a three-dimensional-structure organopolysiloxane was not incorporated in the 25 silicone-based release agent. In Comparative Example 2, in place of the silicone-based release agent, a 2% toluene solution of a long-chain alkyl type release agent (Peeloyl 1010 manufactured by Ipposha Oil Co., Ltd.) was coated at 0.5 g/m² and heat-treated at 80°C for 30 seconds to give a release layer-side sample piece.

[0044] In Comparative Examples 3, 4, and 5, an acrylic pressure-sensitive adhesive (a copolymer of 2 ethylhexyl 30 acrylate and acrylic acid: weight ratio 100/2) was coated for adhesive tape-side samples, in place of the tacky substance containing a rubber as a major component in Examples 1, 2, and 3.

[0045] The results of these are shown in Table 1.

[0046] Incidentally, each test method is as described later.

Table 1

	Bond Strength Test			Monitor Test		
	Peel strength (g/25 mm)	Shear bond strength (g/25 mm)	Holding power (min)	Easiness of peeling	Unsusceptibility to separation	Unloudness of peeling noise
Comparative Example 1	40	1900	2	○	○	○
	2	2700	7	○	○	○
	3	140	more	○	○	○
Example 1	5	100	0.01	○	x	○
	2	350	more	○	○	x
	3	27	20	0.01	x	○
	4	92	85	0.01	x	○
	5	129	182	0.1	x	○

<Peel Strength>

[0047] The adhesive tape-side sample piece was applied, by means of one forward-and-backward movement of a 2 kg roller, to the surface of the release layer of each of release layer-side sample pieces 1, 2, and 3 which had been 55 fixed to a stainless-steel plate, and within 3 minutes of the application, the 180° peel bond strength was measured at 300 mm/min.

<Shear Bond Strength>

5 [0048] One side part (25 mm x 25 mm) of the adhesive tape-side sample piece was applied, by means of one forward-and-backward movement of a 2 kg roller, to the surface of the release layer of each of release layer-side sample pieces 1, 2, and 3 which had been bonded to a small piece cut out of a commercially available paper diaper, and the shear bond strength was measured by pulling away the other end part in the shear direction (pulling speed, 300 mm/min) by means of a Tensilon-type universal testing machine.

<Holding Power>

10 [0049] The samples prepared in the above-described shear bond strength test were held in the vertical direction and hung at a load of 1 kg, and the time period (min) to falling of the adhesive tape-side sample piece was measured.

<Monitor Test>

15 [0050] Each of the above-described sample pieces was actually applied to the fastener parts of paper diapers, and a monitor test was conducted by 10 people with regard to easiness of peeling, unsusceptibility to separation, and unloudness of peeling noise. Those regarded as good by 8 or more of the 10 persons were evaluated as O, those regarded as good by 5-7 persons as Δ, and those regarded as good by 4 or fewer persons as X.

20 [Possibility of Industrial Application]

25 [0051] As described above, the release part structure of the present invention has a feature that the tape or like part is difficult to separate when it should be kept fixed, and on the other hand, when it should be peeled away, noise-free peeling thereof is easy. Therefore, the structure is useful for forming the release parts of paper diapers.

30 [0052] In particular, the structure of the present invention used for fastening paper diapers is noise-free or enables noiseless peeling, meets the consumer demands and is of great practical value in these days of increased spread of paper diapers with the consumed amount thereof per day being large and the frequency of use thereof being high at midnight.

Claims

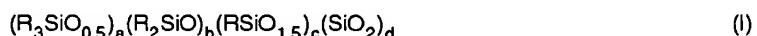
35 1. A paper diaper release part structure having an interfacial boundary, wherein the release part structure comprises

(a) a paper diaper front part being provided with a reinforcing film and a silicone-based release layer coated thereon, said reinforcing film being bonded to the back sheet on the front part of the paper diaper; and

40 (b) a fastener tape comprising a tape support and a pressure-sensitive adhesive layer provided thereon,

45 wherein the interfacial boundary is constituted by the pressure-sensitive adhesive layer and the silicone-based release layer, and

wherein said adhesive layer comprises a tacky substance containing a rubber as a major component and said release layer comprises a silicone-based release agent coated in an amount of 0.01-10 g/m², said silicone-based release agent containing a three-dimensional structure organopolysiloxane in an amount of 1-80% by weight, said organopolysiloxane having the formula (I)

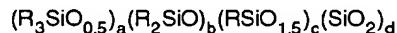


50 wherein R is a monovalent hydrocarbon group, and a, b, c and d, which represent molar fractions of the respective siloxane units, are such that a is 0.1 to 0.6, b is 0 to 0.45, c is 0 to 0.3, and d is 0.3 to 0.8, provided that a/d is 0.3 to 2.0.

55 2. The paper diaper release part structure according to claim 1, wherein the rubber component in the tacky substance mainly comprises an ABA-type or AB-type block copolymer, wherein A is a thermoplastic block and B is a rubber block.

3. A paper diaper having a silicone-based release layer coated on a reinforcing film provided on the back sheet on the front part of the diaper and a pressure-sensitive

5 adhesive layer of a release part structure having an interfacial boundary, wherein the interfacial boundary is constituted by the pressure-sensitive adhesive layer and the silicone-based release layer, and wherein said adhesive layer comprises a tacky substance containing a rubber as a major component and said release layer comprises a silicone-based release agent coated in an amount of 0.01-10 g/m², said silicone-based release agent containing a
 10 three-dimensional structure organopolysiloxane in an amount of 1-80% by weight, said three-dimensional structure organopolysiloxane having an average composition formula represented by



15 wherein R is a monovalent hydrocarbon group, and a, b, c and d, which represent molar fractions of the respective siloxane units, are such that a is 0.1 to 0.6, b is 0 to 0.45, c is 0 to 0.3, and d is 0.3 to 0.8, provided that a/d is 0.3 to 2.0.

4. The paper diaper according to claim 3, wherein the rubber component in the tacky substance mainly comprises an ABA-type or AB-type block copolymer, wherein A is a thermoplastic block and B is a rubber block.

Patentansprüche

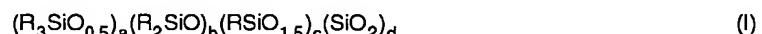
1. Papierwindel-Verschlußstruktur mit einer Grenzflächenanordnung, wobei die Verschlußstruktur umfaßt:

25 (a) ein Papierwindel-Vorderteil, das mit einem Verstärkungsfilm und einer darauf aufgebrachten Trennschicht (Abziehschicht) auf Siliconbasis versehen ist, wobei der genannte Verstärkungsfilm an die Unterlagenschicht des Vorderteils der Papierwindel gebunden ist; und

30 (b) einen Verschlußstreifen, der umfaßt einen Streifenträger und eine darauf aufgebrachte selbstklebende Klebstoffschicht,

wobei die Grenzflächenanordnung aufgebaut ist aus der selbstklebenden Klebstoffschicht und der Trennschicht (Abziehschicht) auf Siliconbasis, und

35 wobei die genannte Klebstoffschicht umfaßt eine klebrige Substanz, die einen Kautschuk als eine Hauptkomponente enthält, und die genannte Trennschicht (Abziehschicht) umfaßt ein Trennmittel auf Siliconbasis, das darauf aufgebracht ist in einer Menge von 0,01 bis 10 g/m², wobei das genannte Trennmittel auf Siliconbasis enthält ein Organopolysiloxan der nachstehend angegeben Formel (I) mit dreidimensionaler Struktur in einer Menge von 1 bis 80 Gew.-%:



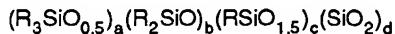
40 worin bedeuten:

45 R eine monovalente Kohlenwasserstoffgruppe und
 a, b, c und d die molaren Mengenanteile der jeweiligen Siloxan-Einheiten, die betragen a = 0,1 bis 0,6; b = 0 bis 0,45; c = 0 bis 0,3; und d = 0,3 bis 0,8, mit der Maßgabe, daß a/d 0,3 bis 2,0 beträgt.

50 2. Papierwindel-Verschlußstruktur nach Anspruch 1, worin die Kautschuk-Komponente in der klebrigen Substanz hauptsächlich ein Block-Copolymer vom ABA-Typ oder vom AB-Typ umfaßt, worin A für einen thermoplastischen Block und B für einen Kautschukblock stehen.

55 3. Papierwindel mit einer Trennschicht (Abziehschicht) auf Siliconbasis, die auf einen Verstärkungsfilm aufgebracht ist, der auf der Unterlagenschicht des Vorderteils der Windel vorgesehen ist und einer selbstklebenden (druckempfindlichen) Klebstoffschicht einer Verschlußstruktur mit einer Grenzflächenanordnung, wobei die Grenzflächenanordnung aufgebaut ist aus der selbstklebenden Schicht und der Trennschicht (Abziehschicht) auf Silicon-

5 basis, und wobei die genannte Klebstoffschicht eine klebrige Substanz umfaßt, die einen Kautschuk als eine Hauptkomponente enthält, und die genannte Trennschicht (Abziehschicht) ein Trennmittel auf Siliconbasis umfaßt, das in einer Menge von 0,01 bis 10 g/m² aufgebracht ist, und wobei das Trennmittel auf Siliconbasis enthält ein Organopolysiloxan mit dreidimensionaler Struktur in einer Menge von 1 bis 80 Gew.-%, wobei das genannte Organopolysiloxan mit dreidimensionaler Struktur die folgende durchschnittliche Zusammensetzung-Formel hat



10 worin bedeuten:

R eine monovalente Kohlenwasserstoffgruppe und
 a, b, c und d die molaren Mengenanteile der jeweiligen Siloxan-Einheiten, wobei bedeuten: a = 0,1 bis 0,6;
 b = 0 bis 0,45; c = 0 bis 0,3; und d = 0,3 bis 0,8, mit der Maßgabe, daß a/d 0,3 bis 2,0 beträgt.

15 4. Papierwindel nach Anspruch 3, worin die Kautschuk-Komponente in der klebrigen Substanz hauptsächlich ein Block-Copolymer vom ABA-Typ oder vom AB-Typ umfaßt, worin A für einen thermoplastischen Block und B für einen Kautschukblock stehen.

20 **Revendications**

1. Structure de partie de décollage d'une couche en papier présentant une limite interfaciale, dans laquelle la structure de partie de décollage comprend

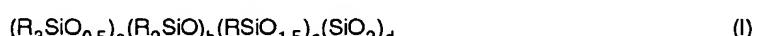
25 (a) une partie avant de couche en papier étant munie d'un film de renforcement et d'une couche de décollage à base de silicone déposée sur son dessus, ledit film de renforcement étant lié à la feuille de support sur la partie avant de la couche en papier; et

30 (b) une bande de fixation comprenant un support de bande et une couche auto-adhésive fournie sur son dessus,

dans laquelle la limite interfaciale est constituée par la couche auto-adhésive et la couche de décollage à base de silicone, et

35 dans laquelle ladite couche adhésive comprend une substance collante contenant un caoutchouc comme constituant principal et ladite couche de décollage comprend un agent de décollage à base de silicone déposé dans une quantité de 0,01-10 g/m², ledit agent de décollage à base de silicone contenant

un organopolysiloxane de structure tridimensionnelle dans une quantité de 1-80% en poids, ledit organopolysiloxane présentant la formule (I)



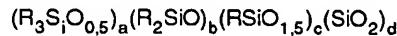
40 dans laquelle R est un groupe hydrocarboné monovalent et a, b, c et d qui représentent les fractions molaires des unités siloxane respectives sont telles que a est compris entre 0,1 et 0,6, b est compris entre 0 et 0,45, c est compris entre 0 et 0,3 et d est compris entre 0,3 et 0,8, à condition que a/d soit compris entre 0,3 et 2,0.

45 2. Structure de partie de décollage d'une couche en papier selon la revendication 1, dans laquelle le constituant de caoutchouc dans la substance collante comprend principalement un copolymère séquéncé de type ABA ou de type AB, dans lequel A est une séquence thermoplastique et B est une séquence de caoutchouc.

50 3. Couche en papier présentant une couche de décollage à base de silicone déposée sur un film de renforcement fourni sur la feuille de support sur la partie avant de la couche et une couche auto-adhésive d'une structure de partie de décollage présentant une limite interfaciale, dans laquelle la limite interfaciale est constituée par la couche auto-adhésive et la couche de décollage à base de silicone, et dans laquelle ladite couche adhésive comprend une substance collante contenant un caoutchouc comme constituant principal et ladite couche de décollage comprend un agent de décollage à base de silicone déposé dans une quantité de 0,01-10 g/m², ledit agent de décollage à base de silicone contenant

EP 0 510 200 B1

un organopolysiloxane de structure tridimensionnelle dans une quantité de 1-80% en poids, ludit organopolysiloxane de structure tridimensionnelle présentant une formule de composition moyenne représentée par



dans laquelle R est un groupe hydrocarboné monovalent et a, b, c et d qui représentent les fractions molaires des unités siloxane respectives sont telles que a est compris entre 0,1 et 0,6, b est compris entre 0 et 0,45, c est compris entre 0 et 0,3 et d est compris entre 0,3 et 0,8, à condition que a/d soit compris entre 0,3 et 2,0.

4. Couche en papier selon la revendication 3, dans laquelle le constituant de caoutchouc dans la substance collante comprend principalement un copolymère séquencé de type ABA ou de type AB, dans lequel A est une séquence thermoplastique et B est une séquence de caoutchouc.

15

20

25

30

35

40

45

50

55

FIG. 1

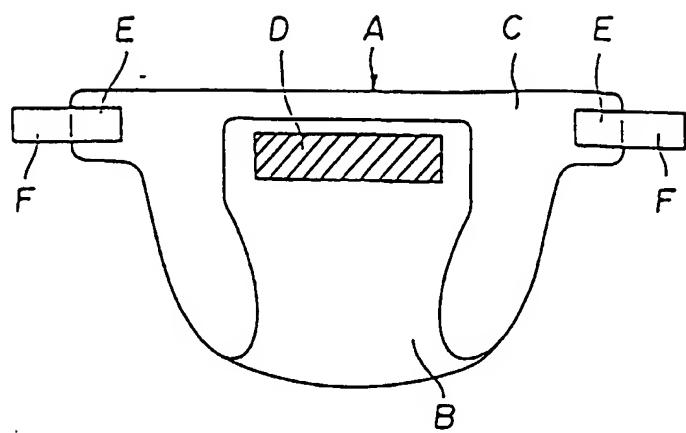


FIG. 2

